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Healthcare providers versus patients' understanding of health beliefs and values

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Research

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Abstract
This study examined how well healthcare providers perceive and understand their patients' health beliefs and values compared to patients' actual beliefs, and to determine if communication relationships maybe improved as a result of healthcare providers' understanding of their patients' illness from their perspective. A total of 61 participants (7 healthcare providers and 54 patients) were enrolled in the study. Healthcare providers and patients individually completed survey instruments and each participated in a structured focus group. Healthcare provider and patient differences revealed that patients perceived greater meaning of their illness ($p = 0.038$), and a greater preference for partnership ($p = 0.026$) compared to providers. The three qualitative themes most important for understanding patients' health beliefs and values as perceived by healthcare providers were education, trust, and culture. Educating patients was perceived as having the greatest impact and also the easiest method to implement to foster providers' understanding, with at least one patient focus group in agreement of same. Likewise, three themes were derived from patients' perspectives as relatively more important in understanding providers' beliefs and values; bidirectional communication, comprehensive treatment, and discipline. Overwhelmingly, bidirectional communication was perceived as a critical factor as having the greatest impact and may also be easiest to implement according to these patients. When patients and healthcare providers listen and communicate with each other, they are likely to develop a shared understanding that may improve future decision making and quality of care patients receive.

Keywords
Patient experience, communication, patient-centered care

Note
The authors would like to thank the LSU Health System Lallie Kemp Medical Center staff and others affiliated for providing the space and patient population to conduct both patient and healthcare provider structured focus groups. Specifically, the authors would like to thank Willene Griffin, co-facilitator of each focus group; Kimberly Kramer, Sandra Larrivee, and Dr. Robbie Beyl for assistance with REDCap data set-up and data analysis respectively; Shannon McNabb, Susan Gravois, Angelique Clark, Stacie Davis, and Marlo Bayham for assisting with data entry, recruitment, scheduling, and follow-up with patients for all focus group meetings. Special thanks to all patients, physicians, and family nurse practitioners for participating and completing this study. Supported in part by 1 U54 GM104940 from the National Institute of General Medical Sciences of the National Institutes of Health which funds the Louisiana Clinical and Translational Science Center.

Introduction

Healthcare providers' understanding of their patients' healthcare beliefs, values, and preferences is an important feature of patient-centered care.[1-3] There are several reasons why this understanding is essential. First, a key supported principle about health behavior systems is that a patient's beliefs about health (e.g., cause of disease, controllability of an illness, value of different treatments) predicts health behaviors such as medication adherence, use of healthcare services, and lifestyle choices.[4-6] Acquiring a better awareness of a patient's health beliefs may help healthcare providers identify gaps between their own and the patient's understanding of his or her health situation.[7] Consequently, this may lead to treatment choices more acceptable to the patient's expectations and needs.[8] Second, healthcare providers' skill at perceiving

and understanding patients' beliefs is also an important aspect of compassion,[9, 10] which equates to perceptions of higher quality care and more effective communication.[11, 12] Lastly, research has shown that patient satisfaction, commitment to treatment, and perceived outcomes of care are greater when the healthcare provider and patient achieve a shared understanding on issues such as the patient's role in decision making, the meaning of diagnostic information, and the treatment plan.[13-17]

Research has shown that healthcare providers often have a modest understanding of their patients' beliefs with respect to patients' preferences for involvement in making decisions about their health,[18] desire for information,[19] perceptions of health condition,[20] interest in life-sustaining treatments,[21] beliefs about treatment effectiveness and diagnosis,[22] level of health literacy,[23] and emotional conditions.[24, 25] Since perceptions of patients can influence healthcare providers' communication and decision-making,[26, 27] and since healthcare providers may have limited awareness of their patients' beliefs, research is needed to determine what factors may contribute to a greater understanding of patients' beliefs and values.

The purpose of this study was to determine healthcare providers' perceptions of their patients' health beliefs and values as compared to patients' actual beliefs, and to determine if communication relationships maybe improved as a result of healthcare providers' understanding of their patients' illness from their perspective.

Methods

Participants

A total of 61 participants (7 healthcare providers, and 54 patients) were enrolled in the study. All healthcare providers and their adult patients receiving medical care within a rural medical clinic, aged 18 years or older, and able to speak English were eligible to participate in the study. Participants unwilling or unable to provide written informed consent were not eligible to participate in the study. Written informed consent was obtained from healthcare providers and patients prior to the start of each session. All patients were compensated with a $40 stipend. The study protocol, procedures, and consent forms were reviewed and approved by the Institutional Review Boards at the Pennington Biomedical Research Center and LSU Health Sciences Center-New Orleans, Louisiana.

Design and Procedures

Qualitative methods including structured focus groups and the previously validated CONNECT survey instrument[28] (Physician and Patient versions) were used to conduct this study. Physicians and family nurse practitioners (collectively referred to in this study as healthcare providers) were contacted by email and flyer inviting them to participate in a structured focus group luncheon to discuss their understanding generally of their patient's health beliefs and values. Healthcare providers agreed to assist in recruiting 7-10 each of their patients. Immediately following a patients' consultation, healthcare providers completed the Physician version of the CONNECT instrument on the applicable patient agreeing to participate in the study. Likewise, patients agreeing to participate after their healthcare provider consultation completed the Patient version of the CONNECT instrument.

Physician and Patient versions of the CONNECT instrument were accompanied by a set of basic demographic questions that included age, ethnicity, gender, education, employment, annual household income, marital and health status. In addition, patients were asked the primary reason for their visit to the clinic, healthcare providers' name, and how many times they had previously seen them. Healthcare providers were asked to list their medical specialty and the number of years practicing in the medical field.

The CONNECT Instrument and Data Analysis

The CONNECT instrument[28] consists of 19 items that is used to assess 6 domains of an individual's perception about a particular health condition; the degree to which: 1) the patient's health condition has a biological cause, 2) the patient is at fault for the condition, 3) the patient has control over the condition, 4) the patient can benefit from natural treatments, 5) the condition has meaning to the patient, and 6) the patient wants a partnership with the physician in managing the condition. The CONNECT instrument is grounded in Kleinman's[29] seminal work on patients' 'explanatory models' and Leventhal's[30] research on physician and patient 'illness representations.'

The instrument is scored by summing the participant's answers on a 6-point Likert scale (1) strongly agree, (2) moderately agree, (3) slightly agree, (4) slightly disagree, (5) moderately disagree, or (6) strongly disagree to the items comprising a CONNECT domain. Higher scores for each of the 6 domains indicates a more biological perception of cause, a perception of greater fault for one's illness, a perception of greater control, a perception of greater effectiveness of non-biomedical, or alternative therapies, a perception of more central meaning of illness to one's overall life, and a greater desire to have a partnership with one's healthcare provider. Scores were standardized to a 100-point scale. Healthcare providers' scores were compared to patients' scores using linear mixed models accounting for patients nested within the healthcare providers.

To examine how well healthcare providers understood patients' health beliefs, t-tests were used to determine if patients' actual beliefs and values differed significantly

from healthcare providers' perceptions of same for each CONNECT domain. To explore whether communication, relationship, and demographic characteristics were related to the level of healthcare providers' understanding of patients' health beliefs, the absolute difference between the patients' score on a particular domain and the healthcare provider's score for how he or she thought the patient responded on that domain served as dependent measures in multivariate mixed linear, regression models that included the patient's race (Black, White), age, gender and education (high school diploma or less, some college or more); racial concordance, gender concordance, and how many previous visits the patient had with the healthcare provider. A priori predictors were not predetermined in this preliminary study, and all analyses were controlled for patients nested within the healthcare providers.

Study data were collected and managed using REDCap[31] electronic data capture tools hosted at the Pennington Biomedical Research Center. REDCap (Research Electronic Data Capture) is a secure, web-based application designed to support data capture for research studies, providing: 1) an intuitive interface for validated data entry; 2) audit trails for tracking data manipulation and export procedures; 3) automated export procedures for seamless data downloads to common statistical packages; and 4) procedures for importing data from external sources.

Focus Groups

To further examine healthcare providers' perceptions of their patients' health beliefs and values compared to actual, the Nominal Group Technique (NGT), a qualitative method of data collection was employed.[32] Prior to conducting NGT sessions, the investigative team articulated the specific question which was pilot tested with those providing and receiving healthcare within a similar medical facility to ensure that it would capture the responses intended.

Healthcare providers participated in one NGT group discussion, and patients participated in one of eleven sixty-minute sessions. Each group consisted of four to nine participants and included both males and females. After welcoming, brief introductions, and preliminary probing questions, the facilitator posed the main question to healthcare providers: "What is your understanding of your patients' health beliefs and values?" Patients were asked similarly: "What is your understanding of your doctor's health beliefs and values?" In response to the question, healthcare providers and patients were asked to work silently and to independently write down as many responses in short phrases as possible. In a round-robin manner, healthcare providers and patients were asked to share their answers (one response at a time); each response was written verbatim on a flipchart without discussion. Each response was discussed for the sole purpose of clarification and not for evaluation or debate as to the relative importance. During this step, healthcare providers and patients were asked to combine responses that were perceived to be significantly similar. This was followed by a voting phase, during which healthcare providers and patients privately selected what they considered to be the top three items from the generated list of responses likely to have the greatest impact on understanding each of their health beliefs and values. Finally, they each ranked the top 3 responses that would be easiest to implement for understanding health beliefs and values from their perspectives.

Each healthcare provider and patient prioritized their choices on their own and without discussing with others, giving a rank of three to the most important and a rank of one to the least important response and likewise for the easiest to implement. The facilitator recorded the votes on a flipchart in front of all participants and then tallied the votes for each response. A small number of unconventional responses were discarded, which is a standard procedure in the NGT. The main results were the top three responses identified within each group; the secondary results were all other responses. Through an iterative process, the facilitators categorized responses into common themes until consensus was achieved.

Results

A total of 61 participants (7 healthcare providers, 54 patients) completed this study. Of 11 total healthcare providers (7 physicians, 4 family nurse practitioners) within this rural medical clinic, two did not show, one left the site, and one became the medical director and forfeited participation in the study. Selected demographic characteristics of the remaining 7 healthcare providers and 54 patients are presented in Table 1. Differences were observed in race, 43 % of healthcare providers were White compared to 43% of patients—Black or Other; and 57% of patients were White compared to 57% of healthcare providers—Black or Other. Overall, 72% of patients earned high school diplomas—some high school or 0-8 grade level education status. Fifty-seven percent of the healthcare providers were physicians and had been practicing a median of 12 (range 7-27) years, and approximately 44% of patients had 5 or more visits with the same healthcare provider.

Healthcare provider and patient differences in health beliefs data are displayed in Table 2. Patients and healthcare providers demonstrated differences in explanatory models on two dimensions of the CONNECT instrument. Patients perceived greater meaning of their illness ($p = 0.038$), and a greater preference for partnership ($p = 0.026$), as compared to healthcare providers. Even though not statistically significant, patients perceived a more biological cause ($p = .056$) for their illness, and

Table 1. Characteristics of Study Participants

Characteristic	Healthcare Providers[a] n = 7	Patients n = 54
Age	**%**	**%**
18-39 y	14.3	16.7
40-59 y	71.4	57.4
60+ y	14.3	25.9
Race		
White	42.8	57.4
Black	28.6	40.7
Other	28.6	1.9
Gender		
Men	57.1	31.5
Women	42.9	68.5
Education		
0-8 Grade		9.3
Some High School		22.2
High School		40.7
1-3 years college		16.7
College degree		9.1
Post graduate degree	100	1.9
Employment		
Full-Time	100	18.5
Part-Time		13.0
Medical Disability		24.1
Unemployed		24.1
Retired		20.3
[b]**Annual Income**		
< 10,000		40.7
10-19,999		20.4
20-29,999		16.7
30-39,999		7.4
70,000 & up	28.6	-0-
No Answer	71.4	14.8
Marital Status		
Married	71.4	38.9
Divorced/separated	14.3	35.2
Never	14.3	20.4
Widowed	-0-	5.5
Health Status		
Excellent	42.8	1.9
Very Good	28.6	13.0
Good	28.6	25.9
Fair	-0-	44.4
Poor	-0-	14.8

[a]Physicians and family nurse practitioners.
[b]Total household income.

better effectiveness of natural treatments (p = .052) as compared to healthcare providers. Additionally, patients who had never seen these healthcare providers before have lower absolute differences in score compared to those who have seen them 5 or more times (p = 0.049), and less difference was observed in patients and healthcare providers of the same race (p = 0.030) on the meaning to patient health domain.

Focus Group Session-Healthcare Providers

Seven healthcare providers participated in one NGT session that generated 25 responses to the question: "What is your understanding of your patient's health beliefs and

Table 2. Differences between Healthcare Providers' health beliefs and Patients' beliefs

CONNECT dimension[a]	Mean healthcare provider score	Mean patient score	P Value[b]
Cause—biological	72.43	82.15	0.0564
Patient at fault	60.96	57.51	0.4733
Patient has control over condition	79.66	81.53	0.9368
Effectiveness of natural treatments	43.11	62.04	0.0517
Meaning to the patient	80.09	91.36	0.0382†
Patient wants partnership with doctor	86.93	99.59	0.0260†

[a]All dimensions scored were standardized to a 100-point scale.
[b] Linear mixed models accounting for patients nested within healthcare providers.
†Indicates significant value ($P < 0.05$).

Table 3. Healthcare Provider Perceptions of Patients

What is your understanding of your patient's health beliefs and values?			
Healthcare Providers n = 7			
Key Themes	**Representative Responses**	**Total Votes**	**Sum of Ranks†**
Education	"Some think generally healthy although they have uncontrolled blood pressure, diabetes, etc."	7	21
	"Patients overall believe in short-term remedies and tend not to understand lifelong problems like diabetes."	5	15
	"Most patients do not understand consequences of non-compliance and following recommendations."	6	13
Trust	"Distrust of the medical system as a whole; side effects of medications. Patients more concerned about that than the disease state."	7	19
	"Complete denial because they don't feel sick or bad, so don't need medicine."	5	15
Culture	"Cultural values and recommendations of family and friends maybe in conflict with your recommendations."	6	16
	"Don't like to take any prescription medicines, but will take a basket full of herbals."	5	11

†Calculated by summing the ranks of responses (3=most important, 2=second, and 1=least important). Higher score = greater perceived importance.

values?" During the clarification discussions, healthcare providers stated that several responses were repetitive, so these responses were combined. The final list generated 7 responses for the prioritization exercise. These responses were organized into 3 themes identified during the iterative process (Table 3). The relative importance of each healthcare provider's response for understanding their patients' health beliefs and values—is reflected by the total number of votes and the sum of the ranks given to that response in Table 3.

When asked what their understanding of patients' health beliefs and values were, healthcare providers responded with the following: *"Some think generally healthy although they have uncontrolled blood pressure, diabetes, etc.;" "Distrust of the medical system as a whole; side effects of medications. Patients more concerned about that than the disease state;" and "Cultural values and recommendations of family and friends maybe in conflict with your recommendations."* These statements were categorized under 3 themes identified during the iterative process as: education, trust, and culture respectively. Secondary and

other healthcare provider responses categorized under each applicable theme are also displayed in Table 3.

The top 3 responses that healthcare providers identified as relatively more important for understanding their patients' health beliefs and values were education, trust, and culture. Educating patients was perceived as having the greatest impact and also as the easiest method to implement for understanding patients' health beliefs and values by these healthcare providers.

Focus Group Sessions-Patients

Fifty four patients participated in one of 11 NGT group sessions. Combined, these patients generated 172 responses to the question: "What is your understanding of your doctor's health beliefs and values?" During the clarification discussions, patients within and across all groups indicated that many of the responses were similar or nearly the same, so responses were merged. The final list generated a combined total of 9 responses for the prioritization exercise. These responses were organized into 3 themes identified during the iterative process (Table 4). The relative importance of each patients' response for understanding their healthcare providers' health beliefs and values—is reflected by the total number of votes and the sum of the ranks given to that response in Table 4.

When asked what their understanding of healthcare providers' health beliefs and values were, patients responded with the following: *"She talks to me and tries to make sure I understand how to handle my problems," "That more tests are needed to determine what is needed to fix the problem," and "That my health is in my hands and if I follow his instructions, take my medications, eat right and exercise, my symptoms will improve and I will be healthy."* These statements were categorized under 3 themes identified during the iterative process as: bidirectional communication, comprehensive treatment, and discipline respectively. Secondary and other patient responses categorized under each applicable theme are further shown in Table 4.

Strategies varied across patient groups for having the greatest impact and easiest to implement. For example, patients in group 3 perceived that comprehensive treatment would have the greatest impact and bidirectional communication would be the easiest to implement.

Table 4. Patient's Perceptions of Healthcare Providers

What is your understanding of your doctor's health beliefs and values?			
Patients n = 54			
Key Themes	**Representative Responses**	**Total Votes**	**Sum of Ranks†**
Bidirectional Communication	"She talks to me and tries to make sure I understand how to handle my problems."	10	30
	"That he explains every aspect of the problem whether it's high blood pressure or blood issues."	8	23
	"She listens and does not cut me short."	7	19
Comprehensive Treatment	"That more tests are needed to determine what is needed to fix the problem."	10	26
	"My doctor is concerned about the past, present, and future health issues."	9	25
	"We are working on improving my health together."	6	12
Discipline is Required	"That my health is in my hands and if I follow his instructions, take my medications, eat right and exercise, my symptoms will improve and I will be healthy."	8	24
	"I know my blood pressure can be controlled if I listen and do what she tells me to do."	6	15
	"That I need more portion control."	5	10

†Calculated by summing the ranks of responses (3=most important, 2=second, and 1=least important). Higher score = greater perceived importance.

Patients participating in groups (2, 6, 9, 10, and 11), perceived that bidirectional communication would have the greatest impact and comprehensive treatment would be the easiest to implement. In addition, patients participating in groups 1 and 4 perceived that bidirectional communication would have the greatest impact and also the easiest to implement; patients in group 5 and 7 perceived that comprehensive treatment would have the greatest impact and also be easiest to implement. Finally, patients in group 8 perceived that in order for healthcare providers to understand their health beliefs and values, educating patients would have the greatest impact and also be easiest to implement.

Bidirectional communication, comprehensive treatment, and discipline was perceived by patients as the 3 relatively more important prerequisites for understanding healthcare providers' health beliefs and values. Additionally, Bidirectional communication was perceived by patients across all 11 groups as a critical factor for patients and healthcare providers to understand each of their health beliefs and values.

Discussion

Using the CONNECT instrument[28] which assesses six domains of patients' and healthcare providers' illness descriptions along with structured focus groups, this study investigated healthcare providers' perceptions of their patients' health beliefs and values as compared to patients' actual beliefs, and examined if communication relationships maybe improved as a result of healthcare providers' understanding of their patients' illness from their perspective. Several findings were revealed and may have important implications for patient-centered medical clinics and future research.

First, healthcare providers' understanding of their patients' health beliefs and values were perceived differently than their patients' actual beliefs and values on two explanatory models of the CONNECT instrument. For instance, healthcare providers perceived that patients' illness had lesser meaning to them, when in fact patients exemplified greater meaning of their illness and was significantly different compared to healthcare providers' perceptions. In addition, healthcare providers perceived that patients desired less of a partnership with them and instead, patients had a significantly greater preference for partnership with their healthcare providers. These findings are consistent with other studies suggesting that healthcare providers may perceive the quality of their interactions with patients differently than do patients.[24, 33-35]

Second, healthcare providers participating in a focus group further perceived that in order for patients to understand the consequences of their actions concerning their health conditions, education is required. More education, which is also associated with more income, serves as a predictor of better health, whereas less education is a predictor of health disparities.[36, 37] Specifically, healthcare providers perceived that educating patients may increase their level of understanding of their health conditions ultimately to improve their ability to comply with the prescribed treatment plan. Perhaps educating patients about their disease process may also improve trust in the medical system. Finally, healthcare providers overall may need education and training in cultural sensitivity to improve patient relationships, quality of life, and health.[38] At least one patient focus group was in agreement with these healthcare providers' assessment of the need for and importance of education. The general consensus across all eleven patient focus groups was that patients are aware of what they need to do; it's a matter of compliance. Research has shown that a shared understanding between healthcare providers and patients is very important and may be foundational to optimizing patient trust, adherence, and disease outcomes.[2, 39]

Third, patients across all focus groups consistently revealed the necessity and importance of bidirectional communication with healthcare providers. In fact, patients expressed "she talks to me……," "she listens and does not cut me short," and ultimately "we are working on improving my health together," suggesting that some patients and healthcare providers may be moving toward the path of a shared understanding within this rural medical clinic. However, healthcare providers will need to be more patient-centered in their communication style with patients incorporating communication skill training as an ongoing and sustained part of medical and continuing education.[40]

Finally, patients' race may be related to how well healthcare providers understand their patients. In this study, there were fewer differences observed between healthcare providers and patients when they were of the same race as it relates to the meaning of their illness. Research has shown that understanding the patients' viewpoint is more complex when healthcare providers and patients are from different cultural and ethnic backgrounds, and they heighten the need for skills training in descriptive medicine, history building, and other forms of cultural competence.[40-42]

Limitations

This study is limited by the small sample size of healthcare providers and patients within one rural medical clinic. Baseline consultation assessments of healthcare providers' understanding of their patients' were not done prior to the start of the study. Furthermore, less than half of patients in the study had consulted with the same healthcare provider 5 or more times. Therefore, it is unclear as to whether or not the accuracy of healthcare providers'

understanding of their patients' health beliefs and values was related to after-consultation outcomes. Depending on the nature of the patients' illness, there was no way to control whether or not a patient consulted with the same healthcare provider or a different one each time a consultation was scheduled at this rural medical clinic.

In addition, qualitative data collection can be subjective and may be prone to human error and perception.[43] The NGT focus group method had some limitations, such that the composition and representativeness of participants may limit the generalizability of the results, training and preparation is required, the discussion is restricted to a single question, and it does not allow further elaboration of other ideas.[44] Furthermore, focus group participants were limited to identifying what was easiest to implement directly from their initial responses to "what is your understanding of your patients'/doctors' health beliefs and values."

With the weight of each participant's opinion being the same; process loss appears less likely to occur creating an advantage to using the NGT.[32] The highly structured format of NGT also provides an opportunity for group participants to achieve a substantial amount of work in a relatively short period of time. Finally, an advantage of the NGT is the deliberate avoidance of interpretation from a facilitator who has the responsibility to explore, but not interfere with or influence participants in the group.[32]

Conclusion

An essential component of patient-centered care is the healthcare providers' understanding of their patients' health beliefs and values. Less difference was observed in patients and healthcare providers of the same race on the meaning of illness to the patient. This study also revealed disparities in healthcare providers' awareness of their patients' health beliefs and values and found that when patients and healthcare providers listen and communicate with each other, they are likely to develop a shared understanding that may improve future decision making and the quality of care patients receive.

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